

CLAIMS

1. A method of treating manure comprising:
  - a) mixing a quantity of manure with lime such that said mixture has a basic pH;
  - b) adding a first coagulating polymer to said mixture, thereby promoting floc formation within said mixture;
  - c) separating the floc from the mixture, thereby forming solids and a liquid portion;
  - d) adding a second coagulating polymer and/or a struvite-promoting compound to said liquid portion, thereby forming solids and clear liquid; and
  - e) separating the clear liquid from the solids.
2. The method according to claim 1 wherein the manure is selected from the group consisting of hog manure, feedlot manure, dairy cow manure and chicken manure.
3. The method according to claim 1 wherein the basic pH is a pH above 11.
4. The method according to claim 1 wherein the basic pH is a pH above 11.5
5. The method according to claim 1 wherein the basic pH is between 11.5-12.5.
6. The method according to claim 1 including removing evolved ammonia during step (a).
7. The method according to claim 6 wherein the ammonia is

removed by bubbling the evolved ammonia into water.

8. The method according to claim 1 wherein the first coagulating polymer is selected from the group consisting of alum and SUPERFLOC.

9. The method according to claim 1 wherein the second coagulating polymer is selected from the group consisting of alum and SUPERFLOC.

10. The method according to claim 1 wherein the struvite-promoting compound is selected from the group consisting of  $\text{MgCl}_2$ ,  $\text{MgSO}_4$ ,  $\text{MgCO}_3$  and magnesium oxide.

11. Use of SUPERFLOC as a coagulant in manure treatment.

12. A composition for promoting struvite formation comprising a struvite promoting compound and a coagulating polymer.

13. The composition according to claim 12 wherein the struvite promoting compound is selected from the group consisting of  $\text{MgCl}_2$ ,  $\text{MgSO}_4$ ,  $\text{MgCO}_3$  and magnesium oxide.

14. The composition according to claim 12 wherein the coagulating polymer is selected from the group consisting of alum and SUPERFLOC.

15. A method of promoting struvite formation comprising:  
providing a quantity of liquid containing dissolved phosphorous;  
adding a struvite promoting compound and a coagulating polymer to said liquid, thereby forming a mixture;  
mixing said mixture, thereby promoting struvite formation;  
allowing said mixture to stand; thereby separating said mixture into

struvite and clear liquid; and

separating the struvite and the clear liquid.

16. The method according to claim 15 wherein the struvite promoting compound is selected from the group consisting of  $\text{MgCl}_2$ ,  $\text{MgSO}_4$ ,  $\text{MgCO}_3$  and magnesium oxide.

17. The method according to claim 15 wherein the coagulant is selected from the group consisting of alum and SUPERFLOC.